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The genus *Laena* Latreille (Coleoptera: Tenebrionidae) in Thailand, with descriptions of new species

Wolfgang SCHAWALLER*
Staatliches Museum für Naturkunde, Rosenstein 1, D-70191 Stuttgart, Germany.

The genus *Laena* Latreille (Coleoptera: Tenebrionidae) in Thailand, with descriptions of new species. - *Laena burkhardti* sp.n., *Laena loebli* sp.n., *Laena masumotoi* sp.n., *Laena pseudosiamica* sp.n. and *Laena schwendingeri* sp.n. from Thailand are described as new, another 5 known species are redescribed. All species of the genus *Laena* Latreille, 1829 are supposed to be endemic in that country. An identification key for all known 10 species from Thailand is provided.

Key-words: Coleoptera - Tenebrionidae - *Laena* - New species - Thailand.

INTRODUCTION

The tenebrionid genus *Laena* Latreille, 1829 contains numerous species, distributed from eastern Europe and the Caucasus to Middle Asia (Schawaller 1995a), the Himalayas (Kaszab 1977; Schuster 1926, 1935), China, Vietnam (Masumoto 1995, 1996a, 1996b), Japan and southward up to continental Malaysia (Schawaller 1995b). From Thailand, 5 species were known by now (Kaszab & Chujo 1966, Kaszab 1973, Masumoto 1989, 1996b), but new collections mainly by Drs D. Burckhardt and I. Löbl from the Geneva museum show, that at least 10 species occur in Thailand. These are summarized alphabetically in the present paper.

None of the species from Thailand could be found in huge material which I have seen from the Himalayas and from Malaysia. Neither are they conspecific with recently described species from China and Vietnam, so far it can be judged by the descriptions and by the comparison of single types. The species characters within the genus are discussed by Schawaller (1995b), a natural subgeneric classification of the species-rich genus is still lacking. Thus, the very probably endemic Thailandese species are not compared herein with species from other regions, but separated by an own identification key. The flightless species usually possess quite small areas.

The species of *Laena* are characteristic elements of the soil fauna in mature forests of different composition, thus all Thailandese specimens have been collected by soil sifting in forests. However, in other regions some species also live in treeless alpine or steppe habitats.

Material

MHNG Muséum d'histoire naturelle Genève
NSMT National Science Museum Tokyo
SMNS Staatliches Museum für Naturkunde Stuttgart

* Contribution to Tenebrionidae, no. 20. For no. 19 see: Stuttgarter Beitr. Naturk. (A) 566, 1997.

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THE SPECIES OF *LAENA* FROM THAILAND

Laena angkhangensis Masumoto, 1996 (Figs 1-3)

Material: Thailand, Chiang Mai, Fang Distr., Doi Angkhang, 7.II.1989 leg. K. Masumoto, 1 male holotype NSMT.

Description: Head with equal punctures, distance of punctures 1-3times as diameters, nearly all punctures with a long seta; diameter of eyes consists of about 8 facets. Pronotum shape Fig. 1; pronotum shining, punctures somewhat smaller and distinctly more scattered than on head, clothed only at all sides with setae as head; lateral margin with distinct and crenulate border, basal and distal margin unbordered; propleures with punctation distinctly smaller and with setation somewhat shorter than on pronotum. Elytra with 10 rows of punctures, second row with about 38 punctures, nearly all punctures with a long seta (Fig. 2); intervals gently convex, shining, scattered with small punctures, most with a long erect seta; basal part of elytra impressed along sutura; interval III with a distinct setiferous umbilicate pore at the tip, interval VII with a distinct setiferous umbilicate pore at the shoulders and interval IX with 4 setiferous umbilicate pores between the shoulders and the tip. Profemur, mesofemur and metafemur each with a distinct and acute spine. Aedeagus Fig. 3. Body length 7.5 mm.

Distribution: Known only from the type locality Doi Angkhang in northern Thailand.

Laena burckhardti sp.n. (Figs 4-6)

Holotype (male): Thailand, NE Bangkok, Khao Yai Nat. Park, Khao Khieo, 1150 m, 28.XI.1985 leg. D. Burckhardt & I. Löbl, MHNG.
Paratypes: Same data as holotype, 9 ex. MHNG, 5 ex. SMNS.

Derivatio nominis: Dedicated to Dr Daniel Burckhardt, Museum of Natural History in Basel, one of the collectors of the type series.

Description: Head with equal and large punctures, distance of punctures 0.5-1times as diameters, nearly all punctures with a long seta; diameter of eyes consists of about 5-6 facets. Pronotum shape Fig. 4; pronotum shining, punctured and clothed with setae as head; lateral margin marked as a distinct waved line, basal and distal margins unbordered; propleures with punctation but without setation as on pronotum. Elytra scattered with large punctures as on head and pronotum, not forming distinct rows and intervals (Fig. 5), all punctures with a long and erect seta; space between punctures flat and shining, elytra with 2 distinct setiferous umbilicate pores at the shoulders and with 4 distinct setiferous umbilicate pores at the tip. Legs without peculiarities. Aedeagus Fig. 6. Body length 1.9-3.2 mm.

Laena fangensis Masumoto, 1996 (Figs 7-9)

Material: Thailand, Chiang Mai, Fang Distr., 22.V.1993, male holotype NSMT.

Description: Head roughly punctured, distance of punctures 0.5-1times as diameters, nearly all punctures with a long seta; diameter of eyes consists of about 12 facets. Pronotum shape Fig. 7; pronotum shagreened, sowewhat uneven, roughly punctured as

head, clothed only laterally with setae shorter than on head; lateral margin distinctly bordered, basal and distal margins unbordered; propleures with punctation distinctly smaller and sparser and with setation shorter than on pronotum. Elytra with 10 rows of punctures, lateral rows irregularly and fused, second row with about 50 punctures, punctures without distinct seta (only with microseta shorter than diameter of puncture) (Fig. 8); internal intervals feebly convex, external intervals convexer, interval IX distinctly ridged, shagreened, very sparsely scattered with small punctures, each with a short seta; basal part of elytra impressed along sutura; interval XI with 3 setiferous umbilicate pores between the shoulders and the tip. Profemur with a distinct spine at the dorsal anterior margin, metatibia with a distinct spine at the inner distal margin. Aedeagus Fig. 9. Body length 10.5 mm.

DISTRIBUTION: Known only from the type locality Fang Distr. in northern Thailand.

Laena loebli sp.n. (Figs 10-11)

H o l o t y p e (female): Thailand, Chiang Mai, Doi Inthanon, 2450 m, 9.XI.1985 leg. D. Burckhardt & I. Löbl, MHNG.

Derivatio nominis: Dedicated to Dr Ivan Löbl, Muséum d'histoire naturelle in Geneva, one of the collectors of the type series.

DESCRIPTION: Head with equal punctures, distance of punctures 2-5times as diameters, nearly all punctures with a long seta; diameter of eyes consists of about 7-8 facets. Pronotum shape Fig. 10; pronotum shining, punctured and clothed with setae as head; lateral margin distinctly bordered, basal and distal margins unbordered; propleures with same punctation but without setation as pronotum. Elytra with 10 rows of punctures, second row with about 35 punctures, punctures without distinct seta (only with microseta shorter than diameter of puncture) (Fig. 11); intervals flat, shining, very sparsely scattered with small punctures, each with a long erect seta as on pronotum; interval VII with a distinct setiferous umbilicate pore at the shoulders and interval IX with 4 setiferous umbilicate pores between the shoulders and the tip. Legs without peculiarities. Aedeagus unknown. Body length 8.5 mm.

Laena masumotoi sp.n. (Figs 12-14)

H o l o t y p e (male): Thailand, Chanthaburi, Khao Sabap Nat. Park, 150-300 m, 23.-24.XI.1985 leg. D. Burckhardt & I. Löbl, MHNG.

Paratypes: Same data as holotype, 2 ex. MHNG, 1 ex. SMNS. Thailand, Phetchaburi, Kaeng Krachan Nat. Park, 450 m, 19.XI.1985 leg. D. Burckhardt & I. Löbl, 1 ex. MHNG.

Derivatio nominis: Dedicated to Dr Kimio Masumoto, Tokyo, who published important taxonomic contributions to the Tenebrionid fauna of Thailand and adjacent countries.

DESCRIPTION: Head roughly punctured, distance of punctures 1-2times as diameters, nearly all punctures with a long seta; diameter of eyes consists of about 6-7 facets. Pronotum shape Fig. 12; pronotum shining, punctured and clothed with setae as head; lateral margin marked as a distinct waved line, basal and distal margins unbordered;

propleures with punctation distinctly smaller and with setation somewhat shorter than on pronotum. Elytra with 10 rows of large punctures, second row with about 27 punctures, nearly all punctures with a seta only somewhat shorter than those on the intervals (Fig. 13); intervals convex, shining, scattered with small punctures, each with a long erect seta, on lateral intervals these punctures elevated, thus intervals crenulated; interval VII with a indistinct setiferous umbilicate pore at the shoulders, interval IX with 3 indistinct setiferous umbilicate pores between the shoulders and the tip. Legs without peculiarities. Aedeagus Fig. 14. Body length 2.8-4.0 mm.

Laena pseudosiamica sp.n. (Figs 15-17)

H o l o t y p e (male): Thailand, Kanchanaburi, Sai Yok Nat. Park, 100 m, 21.VII.1987 leg. P. Schwendinger, MHNG

DESCRIPTION: Head roughly punctured, distance of punctures 1-2times as diameters, nearly all punctures with a long seta; diameter of eyes consists of about 6-7 facets. Pronotum shape Fig. 15; pronotum shining, punctures bigger than on head and partly confluenting, clothed with setae as head; lateral margin marked as a distinct waved line, basal margin deeper than disc of pronotum, distal margin unbordered; propleures with punctation somewhat smaller and with setation somewhat shorter than on pronotum. Elytra with 10 rows of large punctures, second row with about 25 punctures, nearly all punctures with a seta only somewhat shorter than those on the intervals (Fig. 16); intervals convex, shining, scattered with small punctures, each with a long erect seta, on lateral intervals these punctures elevated, thus intervals crenulated; interval IX with 2 indistinct setiferous umbilicate pores between the shoulders and the tip. Legs with all the femora with 2 spines situated on the internal and external margin, and with all the tibiae distinctly bended. Aedeagus Fig. 17. Body length 4.0 mm.

Laena schwendingeri sp.n. (Figs 19-21)

H o l o t y p e (male): Thailand, Chiang Mai, Doi Inthanon, 1650 m, 7.XI.1985 leg. D. Burckhardt & I. Löbl, MHNG.

Paratypes: Same data as holotype, 2 ex. MHNG, 2 ex. SMNS. Thailand, Chiang Mai, Doi Suthep, 1450 m, 4.XI.1985 leg. D. Burckhardt & I. Löbl, 2 ex. MHNG. Mae Hong Son, Doi Chang, 20 km E Pai, 1930 m, 4.VI.1986 leg. P. Schwendinger, 1 ex. MHNG.

Derivatio nominis: Dedicated to Dr Peter Schwendinger, who improved our knowledge about the soil fauna of Thailand with huge collections.

DESCRIPTION: Head roughly punctured, distance of punctures 1-4times as diameters, nearly all punctures with a long seta; diameter of eyes consists of about 6-7 facets. Pronotum shape Fig. 19; pronotum shining, punctures somewhat smaller and distinctly more scattered than on head, clothed with setae as head; lateral margin marked only as a feeble line or nearly absent, basal margin deeper than disc of pronotum, distal margin unbordered; propleures with punctation somewhat smaller and with setation somewhat shorter than on pronotum. Elytra with 10 rows of punctures, second row with about 25

punctures, nearly all punctures with a long seta only somewhat shorter than those on the intervals (Fig. 20); intervals convex, shining, scattered mainly laterally with small punctures, each with a long erect seta; basal part of elytra impressed along sutura; interval III with a distinct setiferous umbilicate pore at the tip, interval VII with a distinct setiferous umbilicate pore at the shoulders and interval IX with 4 setiferous umbilicate pores between the shoulders and the tip. Legs without peculiarities. Aedeagus Fig. 21. Body length 4.3-6.0 mm.

Laena siamica Kaszab, 1973 (Fig. 18)

Material: Not available.

Remarks: From the outer appearance, the above described *pseudosiamica* sp.n. is quite similar to siamica and on the first view they might be considered as conspecific. However, *siamica* is said to have the femora with only 1 spine (in *pseudosiamica* sp.n. with 2 spines situated on the internal and external margin), and the parameres are quite prolonged (Fig. 18) (in *pseudosiamica* sp.n. triangular, Fig. 17). In particular the last difference is significant and can not be neglected, thus both must be considered as different species.

Distribution: Known only from the type locality Kachong forest in southern Thailand (not located).

Laena thailandica Kaszab & Chujo, 1966

Material: Not available.

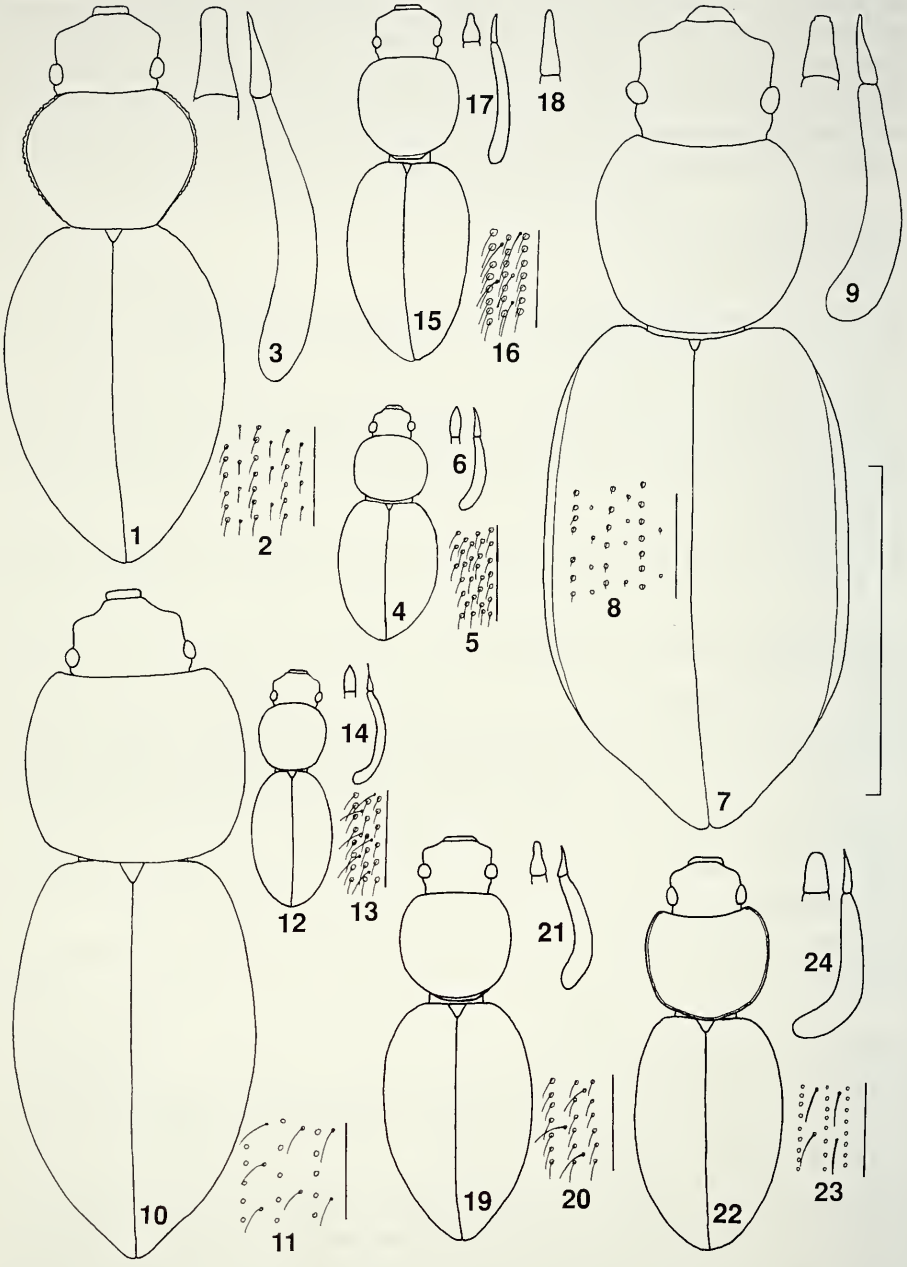
Remarks: This species can be recognized by the short body length (3.5 mm) and the round shape of the elytra, the lacking of a dorsal setation, the shining surface and the pattern of the elytral punctures (foto in Kaszab & Chujo 1966: plate I,6). The original description points to distinct "knobs" on the elytral intervals VII and IX, which are very probably distinct setiferous umbilicate pores. The sex of the single type and the shape of the aedeagus are unknown.

Distribution: Known only from the type locality Khao Luang in Thailand (not located).

Laena uenoi Masumoto, 1989 (Figs 22-24)

Material: Thailand, Chiang Mai, Doi Inthanon, 2500 m, 2.I.1981 leg. L. Deharveng, 2 ex. MHNG. Thailand, Chiang Mai, Doi Inthanon, 1650 m, 7.XI.1985 leg. D. Burckhardt & I. Löbl, 3 ex. MHNG. Thailand, Chiang Mai, Doi Inthanon, 2450-2500 m, 9.XI.1985 leg. D. Burckhardt & I. Löbl, 4 ex. MHNG, 4 ex. SMNS.

Description: Head with punctures of different size, distance of punctures 2-5times as diameters, nearly all punctures with a long seta; diameter of eyes consists of about 6-7 facets. Pronotum shape Fig. 22; pronotum shagreened, punctured and clothed with setae as head; lateral and basal margins distinctly bordered, distal margin unbordered; propleures without punctation. Elytra with 10 rows of small punctures, second row with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about 40 punctures, punctures without seta (Fig. 23); intervals slightly convex, shagreened, sparsely scattered with punctures as on pronotum, each with a long erect seta as on pronotum; interval III with a distinct setiferous umbilicate pore at the tip and interval IX with 4 setiferous umbilicate pores between the shoulders and the tip. Legs without peculiarities. Aedeagus Fig. 24. Body length 4.8-6.8 mm.

Remarks: The shape of the parameres of the above listed material (Fig. 24) is somewhat different in comparison to the figures given by MASUMOTO (1989: Figs 3-4), nevertheless I am convinced of the conspecificity of both series.

DISTRIBUTION: Known only from the type locality Doi Inthanon in northwestern Thailand.

KEY TO THE *LAENA* SPECIES FROM THAILAND

1. All femora or only profemur at the inner side with 1 or 2 spines 2
- All femora without spines 5
2. Only profemur with a spine at the inner side, metatibia with a spine at the inner side, elytral interval IX distinctly ridged . . . . . *fangensis*
- All femora with 1 or 2 spines, metatibia without spines, elytral intervals equal. 3
3. All tibiae strongly curved, pronotum with rough punctation, punctures partly confluenting, body length 4.0-5.4 mm 4
- All tibiae not distinctly curved, pronotum with sparser punctation with shiny spaces between the punctures, body length 7.5 mm . . . . . *augkhangensis*
4. All femora on the ventral side with a single spine on the internal margin, parameres long (Fig. 18) . . . . . *siamica*
- All femora on the ventral side with 2 spines situated on the internal and external margin, parameres triangular (Fig. 17) . . . . . *pseudosiamica* sp.n.
5. Elytra scattered with large punctures, not forming distinct rows and intervals . . . . . *burckhardti* sp.n.
- Elytra with 10 distinct rows of punctures 6
6. Elytra without any setation, shape of elytra nearly round . . . . . *thailandica*
- Elytral intervals and sometimes also the punctures of the elytral rows with long setae, shape of elytra long and oval 7
7. Elytral intervals and sometimes also the punctures of the elytral rows with long setae 8
- Only the elytral intervals with long setae 9

FIGS 1-24

Laena species from Thailand: dorsal view of head, pronotum and elytra; punctation and setation of elytra near sutura; aedeagus from lateral and parameres from dorsal. -- 1-3: *augkhangensis*, holotype male; 4-6: *burckhardti* sp.n., holotype male; 7-9: *fangensis*, holotype male; 10-11: *loebli* sp.n., holotype female; 12-14: *masumotoi* sp.n., holotype male; 15-17: *pseudosiamica* sp.n., holotype male; 18: *siamica*, redrawn after KASZAB 1973; 19-21: *schwendingeri* sp.n., holotype male; 22-24: *uenoi*, male. -- Scale: 4 mm (dorsal view), 2 mm (punctation and aedeagus).

8. Pronotum with the basal margin of pronotum distinctly deeper than disk, punctures of pronotum smaller and distinctly more scattered than on head, body length 4.3-6.0 mm ..... *schwendingeri* sp.n.
- Pronotum with the basal margin on the same level as disk, punctation of pronotum as on head, body length 2.8-4.0 mm ..... *masumotoi* sp.n.
9. Lateral and basal margins of pronotum distinctly bordered, disk of pronotum only with scattered punctation, propleures without punctation, body length 4.8-6.8 mm ..... *uenoi*
- Lateral margin of pronotum only with a fine border, basal margin unbordered, disk of pronotum with dense punctation, propleures with same punctation as on disk, body length 8.5 mm ..... *loebli* sp.n.

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